

## REMARKS

Claims 1-16 have been amended to more definitely set forth the invention, and obviate the rejections. In addition, new claim 17 has been presented. Support for the amendment of Claims 1-16 can be found in the Specification on page 3, paragraph 3, page 5, paragraph 3, to page 7, paragraph 1. Support for new claim 17 can be found in the Specification on page 8, paragraph 2. The present amendment is deemed not to introduce new matter. Claims 1-17 are now in the application.

Reconsideration is respectfully requested of the rejection of Claims 1-5, 8, 9, 13, 15 and 16 under 35 U.S.C. §103(a) as being unpatentable over EPA '017.

The present invention, as now claimed herein, relates to a **process for producing** a microgel having a mean particle size of 0.1-1,000  $\mu\text{m}$  comprising dissolving in an aqueous solvent a hydrophilic compound capable of forming a gel, causing the resultant mixture to form a gel, and pulverizing the gel into a microgel having a mean particle size of 0.1-1,000  $\mu\text{m}$ . The present invention is based on the unexpected discovery that, when a hydrophilic compound capable of forming a gel is formed into a gel which is then pulverized into a microgel having a mean particle size of 0.1-1,000  $\mu\text{m}$ , and then incorporated into a external composition as a viscosity control agent, the resultant composition unexpectedly provides no sticky sensation during use.

It was also unexpectedly discovered that the viscosity of such a composition, **an important characteristic of such cosmetic agents**, is not lowered even when large amounts of pharmaceutical ingredients, such as a whitening ingredient or various salts, are incorporated into the composition.

In contrast, the cited EPA '017 reference discloses an external skin-care composition containing a low-strength agar and a water-soluble polymer such as xanthan gum and carrageenan,

and fails to disclose the process of production as now claimed herein. If the low-strength agar of the EPA ‘017 reference is used, the microgel of the present invention cannot be produced.

Rather, in Examples 1-6 of the EPA ‘017 reference, an aqueous gel is obtained by mixing the low-strength agar, xanthan gum, carboxyvinyl polymer, and water, heating the mixture to 80°C to dissolve the components, and then gradually cooling the solution, adding other components to the cooled mixture, and deaerating the mixture. In Examples 7-10 or 11-14 of the EPA ‘017 reference, a cream or cosmetic emulsion is obtained by stirring the low-strength agar, xanthan gum, carboxyvinyl polymer, and water at 80°C for 30 minutes to disperse them, cooling down the dispersion to 60°C and mixing the cooled dispersion with emulsion and other components, and cooling down the mixture to room temperature with stirring.

The EPA ‘017 reference nowhere discloses forming a gel from a hydrophilic compound capable of forming a gel, such as agar or carrageenan, or from a hydrophilic compound and a viscosity increasing compound incapable of forming a gel, such as xanthan gum, and pulverizing the gel into a microgel having a mean particle size of 0.1 to 1,000 µm, as now called for in the amended claims 1-17 herein.

Further, as the Examiner has stated on page 2, last paragraph, of the instant Office Action, there is no disclosure in the EPA ‘017 reference of the particular viscosity. Moreover, the EPA ‘017 reference fails to teach or suggest that the microgel of the present invention is an excellent viscosity control agent in an external composition, even when large amounts of pharmaceutical ingredients or various salts are incorporated into the composition.

In Example 39 and Comparative Example 16 of the Specification of the present invention, as found on pages 44-46 of the Specification, it is shown that it was discovered that an emulsified

product having identical overall compositions prepared by two different methods have different viscosities. That is, the O/W emulsion which contains the microgel of the present invention has a viscosity of 300,000 mPa·s, whereas, an O/W emulsion which does not contain the microgel of the present invention has a viscosity of 140,000 mPa·s.

These comparative tests confirm that even though the overall compositions per se are identical, a compositional system including microgels obtained through pulverization of a gel exhibits excellent viscosity increasing property as compared with a conventional system including no such microgel.

The Specification herein on page 12, line 14, to page 13, line 25, further points out that, conventionally, an external composition containing a hydrophilic compound capable of forming a gel, such as agar or carrageenan, is gradually cooled under stirring to thereby increase the viscosity of the composition. In contrast, in the present invention, a hydrophilic compound capable of forming a gel is subjected to complete gellation to form a gel, the gel is then pulverized into a microgel, and then incorporated into an external composition to increase the viscosity of the composition, ***AS NOW CLAIMED HEREIN.***

It is respectfully submitted that there is no disclosure whatever in EPA '017 of a process for producing a microgel having the claimed particle size by dissolving a hydrophobic compound capable of forming a gel in an aqueous solvent so as to form a gel, and then pulverizing the resultant gel. On the contrary, that teaching or suggestion comes only from the present application and constitutes an important element or aspect of the present invention as now claimed.

The cited EPA '017 reference also fails to disclose that such a microgel is an excellent viscosity control agent in an external composition, even when large amounts of a pharmaceutical

ingredient or various salts are incorporated into the composition. Moreover, the rejected claims 1-5, 8, 9, 13, 15 and 16 have been amended herein to now call for a **process for producing** the microgel of the present invention, said process NOT being taught or suggested by the cited EPA '017 reference.

In view of the amendments to claims 1-5, 8, 9, 13 and 15-16, and the deficiencies of the cited EPA '017 reference as pointed out above, it is believed that the Examiner would be justified in no longer maintaining the rejection. Withdrawal of the rejection is accordingly respectfully requested.

Reconsideration is respectfully requested of the rejection of claims 1-6 under 35 U.S.C. 103(a) as being unpatentable over Vermeer (USP 5,641,480).

The cited Vermeer reference relates to a hair care composition containing numerous essential and optional ingredients, including thickening agents such as xanthan gum, gelling agents/viscosity control agents, suspending agents such as guar gum, gum agar, xanthan gum, and solubilizing or clarifying agents such as polyethylene glycol. The conditioning shampoo composition of Example 104 contains xanthane gum.

However, there is no disclosure whatever in the Vermeer reference of a **process for producing** a microgel having a mean particle size of 0.1-1,000  $\mu\text{m}$ , as claimed herein. In particular, Vermeer does not teach dissolving a hydrophilic compound capable of forming a gel in an aqueous solvent, causing the resultant mixture to form a gel, *and then pulverizing the formed gel into a microgel having a mean particle size of 0.1-1,000  $\mu\text{m}$* , as now called for herein, or of incorporating such a microgel into an external composition as an excellent viscosity control agent.

In summary, as the claims have now been amended to call for a process of producing the microgel of the present invention (rather than the microgel of the present invention itself), and an external composition containing same, and the cited Vermeer reference fails to disclose or suggest such process of production, it is believed that the Examiner would be justified in no longer maintaining this rejection. Withdrawal of the rejection is accordingly respectfully requested.

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance and early action and allowance thereof is accordingly respectfully requested. If there is any reason why the application cannot be allowed at the present time, the Examiner is respectfully requested to call the undersigned at the number listed below to resolve any problems.

Respectfully submitted,

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## CERTIFICATE OF MAILING

I hereby certify that this correspondence, consisting of an Amendment and Transmittal in U.S. Patent Application No. 09/936,317, filed November 26, 2001, responsive to the final Office Action remailed on December 28, 2005, is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

MAIL STOP AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

On March 28, 2005.

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